



**The Royal
Orthopaedic Hospital**
NHS Foundation Trust

Diagnosis and Management of Common Foot Conditions in Primary Care

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Morton's Neuroma

A swelling of the common digital nerve. It usually affects the nerve to the 3rd & 4th toes (3rd web space) but can sometimes occur in the second web space. It is quite common in runners. Likely caused by rubbing of the nerve between the metatarsal heads.

Symptoms

Forefoot pain. The pain is usually sharp and stabbing. Radiation in to the toes is common. Often it is associated with intermittent numbness affecting the toes, commonly the 3rd & 4th toes. Sometimes the patient may describe the sensation of a lump under the forefoot and occasional clicking. The symptoms are often worse in tight shoes.

Signs

There is often a palpable clunking of the nerve inbetween the metatarsal head (Mulder's click). Pinch the web space between the thumb and index finger and then squeeze the forefoot from the sides with the other hand. This can reproduce symptoms.

Treatment

- Avoid tight shoes.
- An offloading insole orthotic may help.
- Activity modification (runners) and calf stretches.
- Injection – 40mg depomedrone + 2ml 1% lignocaine into the affected web space – not good evidence of *long term* effect.

Referral?

If the symptoms are longstanding (>6 months) then the results of simple treatments and even injection are likely to be less successful. If the symptoms are intrusive then surgical excision should be considered. This is a day case procedure and return to normal activities can be expected after approx. 3 weeks.

Metatarsalgia

Pain under the forefoot due to abnormal pressure distribution and prominent lesser metatarsal heads.

Symptoms

Pain affecting the forefoot. This is usually activity related, worse after walking distances or standing for long periods. The patient may describe a sensation like 'walking on marbles'.

Signs

There may be prominent callus under the forefoot. There is tenderness palpating directly under the metatarsal heads. This problem can be associated with lesser toe deformities such as hammer toes. Examine the Achilles tendon for tightness – this can lead to increased forefoot pressures.

Treatment

- Shoe wear advice is important. Firm supportive rubber soles help to lessen impact. Weight loss important.
- An insole orthotic with a premetatarsal dome to redistribute the pressure over the forefoot.
- Physiotherapy – stretching exercises if Achilles tightness is noted.
- Podiatry assessment can be useful.

Referral?

If you think the symptoms are part of a more complex deformity involving the lesser toes or the whole foot then further assessment may be needed.

If conservative measures fail then surgery may be necessary to lift the metatarsal heads (e.g. Weil osteotomy). This is a day case procedure, no plaster is needed after surgery.

Hallux Rigidus

Literally – stiff big toe. Degenerate change in the hallux metatarsophalangeal joint. Sometimes confused with a bunion but the lump tends to be more prominent **dorsally** than to the side.

Symptoms

Pain around the hallux metatarsophalangeal joint. Activity related. There is often a sensation of stiffness and restricted movement. If the osteophyte is large it can rub on shoes.

Signs

The big toe is usually reasonably well aligned. There may be a prominent lump and some redness in the skin on top of the 1st metatarsophalangeal joint (due to the osteophyte). It is usually tender on top of the joint and the range of dorsiflexion (normal 80-90°) is variably reduced.

Treatment

- Simple analgesia.
- Supportive shoes can help. A stiffened insert under the metatarsophalangeal joint can help reduce symptoms by protecting the joint. Rocker/roller soled shoes often very helpful.
- Injection. In the early stages this may help - 40mg depomedrone + 1ml 1% lignocaine injected into the joint.

Referral?

If pain is not well controlled or the bony lump is large. A cheilectomy (tidying up the joint and removing osteophytes) can help in the early stages. If severe then a fusion or joint replacement may be performed.

Hallux Valgus (Bunions)

A slowly progressive forefoot deformity, related to shoe wear and also family history. The first metatarsal drifts medially and the big toe is pulled laterally (valgus) by tendons – this gives the appearance of a lump on the side of the foot. Simply shaving the ‘lump’ is no longer considered a reasonable option.

Symptoms

Bunions are only a problem if they cause pain or problems with the second toe (hammering & overriding).

Signs

Tenderness over the medial aspect of the hallux metatarsophalangeal joint. Examine for stiffness or discomfort on moving the hallux metatarsophalangeal joint. Examine the 2nd toe for deformity

Treatment

- Shoe wear – wide toe box with soft leather uppers. Make the shoe fit the foot, not visa versa (see p.19).
- Gel sleeves can be used on overriding second toes.
- Insoles – ‘toe spacers’ may help but there is little evidence to suggest that orthotics halt progression of bunions.

Referral?

If the patient is in pain despite adjusting shoe wear then consider referral. Also if the second toe is involved and deformity progressing consider referral.

There are many described operation to correct bunions but the SCARF osteotomy is recognised now as being very reliable. This can be performed as a day case. There is no need for a plaster but a post-op shoe and splint is worn for 6 weeks. Standing occupation (teacher/nurse) – 8 weeks off work.

Please send for **weight bearing** foot x-rays (AP, lateral, oblique).

Bunionette

As we age the foot broadens and sometimes this can lead to rubbing on the outer border of the foot (over the 5th metatarsophalangeal joint)

Symptoms

Pain and callus on the lateral aspect of the 5th metatarsophalangeal joint. Activity related and worse in tight shoes.

Signs

The 5th metatarsal head may appear prominent and there is redness +/- callus on the outer border of the foot. The shoe uppers may be stretched and worn over the lateral aspect.

Treatment

- Shoe wear advice – wide toe box with soft leather uppers (see p.19).

Referral

If painful despite simple measures and shoe modification then may need a corrective osteotomy. Day case procedure. Post-op shoe for 6 weeks.

Lesser Toe Conditions

Hammer toes, claw toes, mallet toes, and curly toes.

Symptoms

Symptoms vary according to the specific deformity but the main presenting problem is pressure symptoms, causing rubbing, callus and pain.

Signs

A crooked looking toe! Whole chapters in books are dedicated to this. Look for associated hallux valgus, leaning on the second toe. Inspect for callus. Claw toes tend to occur in multiple digits, both feet and can be associated with more complex deformities such as pes cavus. Check the metatarsophalangeal joint to ensure no obvious dislocation.

Treatment

- Shoe wear advice. If rubbing is the main problem then extra depth toe box with soft leather upper can help.
- Gel sleeves over the affected digit can lessen symptoms.
- Taping. An isolated raised digit can be taped down. Loop over the toe and fix to the underside of the forefoot.

Referral

Severely deformed toes may not respond to conservative measures. If simple measures fail then surgery may be warranted however straightening deformed toes is notoriously difficult and patients should be warned that improvement in symptoms, not perfect looking toes is the goal. A wire is often used to hold the toe in the corrected position – this is removed in clinic at 4-6 weeks.

Ingrown Toenail

Common condition, usually medial hallux nail margin.

Symptoms

Pain at the nail margin and recurrent inflammation +\|- infection.

Signs

The nail is curved at its margin, digging into the inflamed soft tissues.

Treatment

- Treat acute infection with antibiotics and saline soaks.
- Allow nail to grow out and lift nail margin.

Referral?

Recurrent problems.

We perform a wedge excision of the nail with ablation of the germinal matrix from where the nail grows. This narrows the nail slightly but is a reliable way of preventing recurrence. This can be performed as a day case under local anaesthetic.

Tibialis Posterior Dysfunction (Adult flatfoot)

The tibialis posterior tendon is a strong tendon which courses around the medial malleolus of the ankle and inserts onto the navicular on the medial aspect of the foot. It has an important role in supporting the medial arch of the foot.

Symptoms

Pain on the medial aspect of the ankle just below the malleolus. Activity related. In advanced cases pain can develop on the lateral side of the ankle due to tilting out of the hindfoot and impingement. The patient may also report that their ankle feels like it is rolling in.

Signs

Swelling and tenderness along the course of the posterior tibial tendon. Reduced power testing the tendon, compared to the unaffected side. Inability to perform a single heel raise. Flattening of the arch or an apparent 'rolling in' of the ankle. The heel may appear turned out (valgus) when viewed from behind.

Treatment

- Anti-inflammatories, **urgent** physiotherapy and orthotics
- Posterior tibial tendon brace (PTTD) to offload the tendon may help if this problem is diagnosed early however patients often present when the tendon has already defunctioned.
- Do not inject around the tendon due to risk of rupture.

Referral

Once the tendon defunctions and shape change occurs (rolling in, flattened arch) there is little chance of recovery. It can be managed long-term in a brace but often surgery is needed to treat the pain and recreate the normal arch to the foot. This is achieved with an osteotomy of the heel and transfer of a tendon from under the foot. Overnight stay then 6 weeks in a plaster.

Midfoot Arthritis

There are many joints in the midfoot region which may become arthritic.

Symptoms

Pain across the midfoot region which is activity related. There may be some reported swelling.

Signs

There is often little to see however occasionally a spur or 'boss' can be felt on the dorsum of the midfoot. Careful attention with palpation can usually identify the suspect joints. An x-ray will help with diagnosis.

Treatment

- Shoe wear – shoes with a rocker sole help with pain. Examples are walking shoes (Vibram sole), MBT shoes, Sketcher's shape ups.
- A stiff orthotic to support under the midfoot may also help.

Referral

If you are unsure of the diagnosis or simple measures are not helping with the pain then please refer.

Targeted injections can sometimes relieve the pain. A fusion operation may be needed in advanced cases. This requires an overnight stay then 6 weeks in a plaster followed by a further 6 weeks in a plaster or removable boot.

Beware the diabetic who presents with a hot swollen midfoot – this may be Charcot arthropathy and warrants urgent referral to a diabetic foot clinic.

Plantar Fasciitis

The plantar fascia is a strong band of tissue that runs under the foot from the calcaneum to the toes. Plantar fasciitis is a common problem. Symptoms will eventually resolve in most people but the time frame for recovery is around 12-18 months. Weight loss important.

Symptoms

Pain in the heel on the plantar aspect. Worse in the morning particularly the first few steps. The pain can be disabling.

Signs

Look for Achilles tightness as the two can be related. Palpate over the attachment of the plantar fascia on the medial plantar aspect of the heel (the medial calcaneal tubercle).

Treatment

There are many treatments reported for plantar fasciitis however none has proven to be regularly successful and it is therefore difficult to advise patients. Podiatry assessment and advice can be very useful.

- Weight loss
- Physiotherapy – calf stretching exercises and taping.
- Anti-inflammatory medication.
- Orthotics.
- Night splints (Strassburg socks).
- Injection – inject at the tender spot at the plantar fascia origin. Sink needle to bone. 40 mg depomedrone + 3-5ml 1% lignocaine.

Referral?

Shockwave therapy is usually helpful and is available at ROH. (see p17) Few patients require surgery. 50% will be improved, 25% will be better, 25% will gain no improvement or be worse from the operation.

Achilles Tendinopathy

Achilles tendon problems are quite common in overweight middle aged patients and also those involved in sports activities (particularly runners). It can present in two forms, insertional and non-insertional depending on the site of symptoms. Treatment is similar for both.

Symptoms

Pain either at the tendon insertion to the calcaneum or in the mid-tendon area. Activity related. Worse in morning or having sat for a long period.

Signs

Swelling and tenderness along the course of the Achilles. Assess for Achilles tightness.

Treatment

- Physiotherapy – 12 week eccentric stretching programme (Alfredson's regime). Successful in 75% patients.
- Heel raise – in shoe to take tension off the tendon.
- Do not inject around the Achilles for risk of tendon rupture.
- GTN patches, night splints, activity modification

Referral?

If symptoms over 6 months and no benefit from stretching then refer.

Shockwave therapy can improve symptoms (see p.17).

The tendon may need debriding and some patients require removal of some bone at the back of the calcaneum (Haglund's deformity).

Rupture?

Rupture presents as an acute event with sudden loss of function. There is a palpable gap at the rupture site and there is no movement of the foot on squeezing the calf with the patient prone or kneeling on a chair (Simmonds Test). These patients should be sent to a local Emergency Department for a plaster.

Ankle Sprains

This is a common injury from which most people make a full recovery after approximately 6 weeks to 3 months. A small percentage have ongoing problems in the form of instability, cartilage damage or tendon tears (often peroneal).

Symptoms (if ongoing problems)

Symptoms that warrant concern include recurrent episodes of instability or ongoing pain (after 6-12 weeks).

Signs (if ongoing problems)

Examine the range of movement and stability of the ankle.

Palpate along the peroneal tendons for swelling and discomfort, test function (foot eversion against resistance).

Palpate the anterior ankle joint for tenderness (osteochondral lesion).

Treatment

- In the acute phase - rest, ice, compression and elevation.
- Physiotherapy is helpful after 2 weeks to restrengthen the ankle and re-educate proprioception.

Referral?

On-going symptoms after 6-12 weeks.

X-rays are often normal but a good starting point. An MRI scan is usually arranged at clinic (or on referral from GP if information provided suggest it will be necessary).

If instability is the problem then the lateral ligaments may need reconstructing (2 week plaster then bracing and physiotherapy).

If pain is the main problem then an arthroscopy to repair damaged cartilage or surgery to repair the peroneal tendons may be needed.

Ankle and Subtalar Arthritis

Ankle arthritis may be less common than hip or knee arthritis but it is equally disabling.

Symptoms

Pain anteriorly across the ankle joint or under the fibula (subtalar pain). Ankle pain can be worse on slopes due to restricted flexion/extension. Subtalar pain is noticeably worse on uneven surfaces or cambers.

Stiffness, particularly first thing or after resting for a period.

Catching and locking. 'Giving way' - usually pain related.

Signs

Tenderness palpating anteriorly across the ankle joint or under the fibula (sinus tarsi) for subtalar joint.

Treatment

- Analgesia.
- Activity modification.
- Ankle brace (orthotic department).
- Injection – the ankle joint is relatively easy to inject however the subtalar joint is more difficult. 40mg depomedrone + 3-5ml 1% lignocaine.

Referral?

Poorly controlled symptoms /pain.

Significant deformity in any plane.

X-rays and CT scans will confirm the extent of the problem and involvement of surrounding joints before a decision is made regarding treatment. Fusion of either the ankle joint or subtalar joint are reliable pain relieving procedures. **Total Ankle Replacement is a good option in many patients, especially those with other affected joints.**

Flat feet in children

Are flat feet abnormal?

Feet are built in all different shapes and sizes. Flat feet refers to loss of the height of the arch on the inner side of the foot. There is a spectrum from very flat arches to high arched feet.

Most flat feet are normal and people are born that way rather than developing flat feet later on. This simply reflects the way they have been put together and the genes that have been passed on to them. For this reason most people do not need treatment. Some world class sports stars have flat feet.

Some flat feet, however, are abnormal and need further investigation.

Should I be worried?

If the child's feet are painful or stiff then you should seek an orthopaedic opinion.

Sometimes flat feet in children can become painful and stiff because some of the bones don't separate normally (coalition).

Examination

Ask the child to stand on tiptoes – if the heel swings in towards the midline and the arch reforms then they can be reassured not to worry unless the feet become painful.

Examine the subtalar joint for range motion – flatfeet with a stiff subtalar joint are most likely abnormal.

Treatment

If the child wears through their shoes unevenly or very quickly then an orthotic may help to prevent this. There is no good evidence that orthotics will change the shape of the feet or have an effect on function in the long term, however some children seem to benefit from them.

- Reassuring the parents is often all that is needed.
- Refer if the foot is painful or stiff.

Extracorporeal Shockwave Therapy

What is it?

Extracorporeal Shockwave Therapy, or ESWT, is a treatment that was originally used for treating kidney stones however its other uses soon became apparent. It is a non-invasive treatment that can be given in the outpatient clinic, no operation or anaesthetic is required. ESWT uses energy generated in a hand held applicator which is administered to the painful tissues.

What can it be used for?

ESWT can be used for painful problems affecting the Achilles tendon and for plantar fasciitis or 'heel pain'. There is also evidence that it may be helpful for problems such as 'tennis elbow' and tendinopathies affecting the shoulder, hip and knee. It is often useful even if other therapies have failed.

Does it work?

The device uses pulses of high pressure sound or 'shockwaves' that are focused over the abnormal, painful tissue. The mechanical stimulation causes inflammation and this triggers the body's natural healing response and increases blood flow to the area. There is also evidence that it may stimulate growth factors which are important for repair and it may decrease pain signalling substances.

Does it hurt?

No. ESWT should not be painful, no anaesthetic is required and the patient may go home straight away afterwards. Driving is permitted immediately afterwards.

How many treatments?

Three treatments are given at weekly intervals. The treatment is given in the out-patient setting. Patients should be referred to the 'Heel Pain Clinic'.

Operation Information

Before surgery

Keep feet clean and avoid getting any scratches or sores on the feet as this may affect surgery. Please notify us via our secretary if any skin problems develop. Do not eat or drink from 6 hours before surgery. Water only can be drunk until 2 hours before surgery.

On admission

The patient will be shown to their bed and there will be some paperwork to fill in. The surgeon will check the consent form and mark the operation leg. The anaesthetist will visit the ward to talk about the anaesthetic.

Hospital stay

Many foot and ankle procedures can be done as day cases however patients undergoing more complex operations would expect to stay in for 1 night. Expected length of stay will be discussed at the out-patient appointment. The physiotherapists will ensure safe mobilisation before discharge. The patient will be given an appointment for follow-up in the clinic rooms.

After the operation

Feet swell after surgery and it is very important to keep the foot elevated at the level of the heart as much as possible for the first two weeks. At this point the patient will usually be seen in out-patients for a check-up. Sutures are trimmed or removed at this time.

If there are any concerns regarding a patient after surgery then please contact the surgeons' secretaries at the ROH.

The Royal Orthopaedic Hospital0121 685 4212/4298

Useful links / contacts

Podiatry Service Referrals (Royal Orthopaedic Hospital)

Rob Cox.....0121 685 4296

Orthotic Department Referrals (Royal Orthopaedic Hospital)

James Wall 0121 685 4123

Plaster Room (Royal Orthopaedic Hospital)

Technicians..... 0121 685 4000

Shoes (including extra wide fitting)

www.hottershoes.com 0800 0838490

www.cosyfeet.com 01458 449035

www.shoetailor.com 0871 231 2000

British Orthopaedic Foot and Ankle Society

www.bofas.org.uk/PatientInformation.aspx

Extracorporeal Shockwave Therapy (further info)

www.spectrumtechnologyuk.com

Websites:

www.anklefootsurgeon.co.uk

www.footandankle.co.uk

Private Referrals

Private Suite

Royal Orthopaedic Hospital NHS Foundation Trust

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